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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,469	01/29/2004	Gunter Zauner	1103621	3720

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EXAMINER	
MERKLING, MATTHEW J	
ART UNIT	**PAPER NUMBER**
1764	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/766,469	ZAUNER, GUNTER	
	Examiner	Art Unit	
	Matthew J. Merkling	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-7,9-11,13-16,21 and 22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-7,9-11,13-16,21 and 22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 2-6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. (US 4,632,216, hereinafter Wagner '216) in view of Badeau et al. (US 6,604,604).

Regarding claim 21, Wagner '216 teaches an exhaust gas treatment device (muffler (22), see abstract) comprising:

an elongated body (70) having a longitudinal axis; an inlet portion (right side of tube (70, see Fig. 4) located at one end of the elongated body for receiving the exhaust gas;

a sleeve (tube, 70) extending generally away from the inlet portion generally along the longitudinal axis (see Fig. 4);

at least one depression formed in the sleeve (creases, see Figs. 4 and 5), the depression having a depth, the depth of the depression increasing with increasing distance from the inlet portion (see diagram showing creases increasing in depth along tube 70's longitudinal axis in Fig. 4); and

a perimeter defined by the outlet of tube 70, in a plane perpendicular to the longitudinal axis, the perimeter increasing with increasing distance from the inlet portion (which can be deduced from the diagrams of the outlet end (88) of tube 70 in Figs. 4 and 5 and by the formation of the tube by bending, see col. 5 line 58 – col. 6 line 16), and

a cross-sectional area defined by the surface in a plane perpendicular to the longitudinal axis, the cross-sectional area decreasing with increasing distance from the inlet portion (which can be deduced from the diagrams of the outlet end (88) of tube 70 in Figs. 4 and 5).

While Wagner '216 discloses a configuration for a muffler comprising multiple sleeve/tube, Wagner '216 fails to teach a catalytic material disposed on the sleeve (70) surface.

Badeau also discloses a muffler. Badeau teaches multiple sleeves/cups (18, 20, 22) inside a muffler (12) that are coated with a catalytic material in order to treat exhaust gas that passes through the muffler and reduce emissions (col. 1 lines 8-17, col. 2 lines 32-41).

Although the structure of Badeau and the structure of Wagner '216 are not identical, it would have been obvious to one of ordinary skill in the art at the time of the invention to add a catalytic material, as in Wagner '216, to the tube (as set forth above) of Wagner '216 in order to catalyze exhaust gas that passes through the muffler while attenuating noise at the same time.

Regarding claims 2 and 3, Wagner '216, as discussed and modified above, further discloses perforations in the tube with the active surface (70, see Fig. 4).

Regarding claims 4 and 5, Wagner '216, as discussed in claim 21 above, further discloses the depression (creases) in tube 70 extend along the longitudinal axis (see Fig. 4) and are arranged in regular intervals around the sleeve (see Fig. 5).

Regarding claim 6, it can clearly be seen from the diagram of Fig. 5, that the area encompassed by the perimeter of the creases in tube 70 is less than 95% of the area encompassed by the cross section of tube 70.

4. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. (US 4,632,216 hereinafter Wagner '216) and Badeau et al. (US 6,604,604) as applied to claim 21 above, and further in view of Gieshoff et al. (5,934,073).

Regarding claim 7, Wagner '216, as discussed in claim 21 above, further discloses the sleeve (70, Fig. 4) has an opening (88) formed in an end of the sleeve opposite the inlet area (see Figs. 4 and 5).

Wagner '216 fails to teach the catalytic converter device further comprising a cover plate covering the opening.

Gieshoff also discloses a catalytic converter device for purifying exhaust gas from an internal combustion engine (abstract).

Gieshoff teaches a cover plate (Fig. 2 (13)) on the end of a sleeve opposite the inlet (Fig. 2 (2')) in order to force exhaust gas to flow radially outward past catalyst (4') (paragraph 24, lines 9-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the coverplate of Gieshoff to the sleeve of the modified Wagner '216, in order to force exhaust gas radially outward past the catalyst.

5. Claims 9-11, 13, 14, 16 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. (US 5,828,013, hereinafter Wagner '013) in view of Reck et al. (US 6,689,327).

Regarding claim 22, Wagner '013 discloses an exhaust system for an internal combustion engine (see abstract), comprising:

an exhaust inlet (inlet tube, 22) defining an upstream end of the exhaust system (see Fig. 1);

an exhaust outlet (26) defining a downstream end of the exhaust system,

the exhaust inlet and the exhaust outlet defining a flow path therebetween (see Fig. 1);

a primary catalytic converter device (50) disposed along the flow path; and

a preliminary device (42) disposed along the flow path in an upstream direction from the primary catalytic converter (see outlet portion of inlet tube 22, in Fig. 1),

the preliminary device (42) comprising:

an elongated body having a longitudinal axis (see Fig. 1);

an inlet portion (22) located at one end of the elongated body for receiving the exhaust gas (col. 6 lines 24-44);

a sleeve extending generally away from the inlet area generally along the longitudinal axis (tube, see Fig. 1);

at least one depression formed in the sleeve (see depressions formed between edges (56) in outlet opening in Fig. 2), the depression having a depth, the depth of the depression increasing with increasing distance from the inlet area (see Fig. 1, where depth of the depressions increases between edges 56); and

the surface area of the device increasing with increasing distance from the inlet area (surface area inherently increases with increasing distance from the inlet), and

the cross-sectional area of the surface in a plane perpendicular to the longitudinal axis decreasing with increasing distance from the inlet area (see Figs. 1 and 2, where the cross section reduces as distance from the inlet increases).

Wagner '013 fails to disclose an active surface on the sleeve upstream of the catalytic converter.

Reck also discloses a catalytic converter (9) with a sleeve upstream of the catalytic converter (see Fig. 7) that is used in exhaust treatment of an internal combustion engine.

Reck teaches a preliminary converter (pre-catalyst) that is coated on the sleeve upstream of the primary catalytic converter (9) in order to effectively treat high hydrocarbon containing exhaust gases without overheating the primary catalytic converter (col. 1 line 62 – col. 2 line 5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the pre-catalyst of Reck to the sleeve (which is upstream of the primary catalytic converter) of Wagner in order to effectively treat high hydrocarbon streams prior to entry into the primary catalytic converter where the high hydrocarbon concentrations can cause overheating.

Regarding claim 9, Wagner '013, as discussed and modified by Reck in claim 22 above, further discloses a muffler (see abstract), wherein the preliminary catalytic device is at least partially arranged within the muffler (see Fig. 1).

Regarding claims 10 and 11, Wagner '013, as discussed and modified above, further discloses perforations (38) in the tube with the active surface (see Fig. 1).

Regarding claims 13 and 14, Wagner'013, as discussed in claim 22 above, further discloses the depressions are parallel to the longitudinal axis (see Fig. 1) and there is a plurality of depressions that are arranged at regular intervals around the sleeve (see Fig. 2).

Regarding claim 16, it can clearly be seen from the diagram of Fig. 2, that the area encompassed by the perimeter of the creases in tube 24 is less than 95% of the area encompassed by the cross section of the inlet tube.

6. Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner et al. (US 5,828,013, hereinafter Wagner '013) and Reck et al. (US 6,689,327) as applied to claim 22 above, and further in view of Gieshoff et al. (5,934,073).

Regarding claim 15, Wagner '013 as discussed in claim 22 above, further discloses the sleeve (inlet tube, Figs. 1 and 2) has an opening (see center of Fig. 2) formed in an end of the sleeve opposite the inlet area (see Fig. 1).

Wagner '013 fails to teach the catalytic converter device further comprising a cover plate covering the opening.

Gieshoff also discloses a catalytic converter device for purifying exhaust gas from an internal combustion engine (abstract).

Gieshoff teaches a cover plate (Fig. 2 (13)) on the end of a sleeve opposite the inlet (Fig. 2 (2')) in order to force exhaust gas to flow radially outward past catalyst (4') (paragraph 24, lines 9-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the coverplate of Gieshoff to the sleeve of the modified Wagner '013, in order to force exhaust gas radially outward past the catalyst.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Merkling whose telephone number is (571) 272-9813. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJM

GLENN A. CALDAROLA
PRIMARY EXAMINER
~~GROUP 1100~~
TC1700